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Biographical Sketch of the Late Nathaniel Archer Randolph, M.D.

By J. T. Rothrock, M.D.

(Read before the American Philosophical Society, May 3, 1889.)

It is not unusual to find men, young and old, who have lived with so clear a conscience that they have few regrets and no fears when the supreme hour of their earthly career comes. It is also very certain that these men leave behind them vacancies which are hard to fill, and that those who knew them best mourn their departure most.

When a young man, jealous of his integrity, conscious of his powers, devoted to the work and welfare of the world, is unexpectedly snatched away after years of preparation, it is but natural that we should regard our loss as almost beyond repair.

We, to-night, deplore the removal from our midst by death of just such a man. Lest it should be supposed that this is the expression merely of an overfriendly opinion, I shall reinforce what I have said by the further statement that Doctor Randolph was both a positive and a popular man; to have been both is so remarkable that it presupposes some extraordinary qualities, which are not often combined in one individual.

Nathaniel Archer, son of Nathaniel and Eliza S. Randolph (now Eliza S. Turner), was born November 7, 1858, after the death of his father. From his earliest childhood he appears to have been conscientious beyond the measure of most boys. To illustrate the above statement: on one occasion, he refused to say, I will be glad to see another child, because, said he, how can I be glad to see one whom I do not even know? With most persons a fondness for natural history, or a special branch of it, can be traced to a particular influence. So far as we can see, this was not the case with young Randolph. He grew up with it, and no more wondered at his mental preferences, or thought of questioning their validity or importance than why he should eat or sleep. His fondness for living things was as decided as was his power of making friends with them. It is said by those who knew him best, that later in life, in his physiological experiments, he was scrupulously careful to reduce suffering to a minimum and never to inflict it at all, save with a clearly defined purpose in view.

His tastes are thus seen to have been naturally those of a student and an observer. Young Randolph rather avoided than courted the manly sports which most boys admire. In fact, it is said by one who had abundant opportunity for knowing, that he did not incline to enough exercise to keep him in the best physical condition. This, however, was due to no lack of spirit, but because he preferred to study, or to amuse himself, in a quieter way. His disposition was gentle; hence, it was an exceedingly rare thing for him to utter a harsh word against any one. This was so true that even his most familiar friends, to whom he confided most of his

likes and dislikes, more than once remarked that he seldom spoke unkindly of his acquaintances or associates.

Dr. Randolph's education was commenced in Philadelphia. Later, he was sent to Swarthmore College, near Media, in Pennsylvania. When seventeen years of age, he entered Cornell University, at Ithaca, in New York; where, while yet a freshman, he contended for and secured one of the prizes that previously none but seniors had entered the list to compete for.

In the spring of 1882, he graduated in medicine at the University of Pennsylvania. His thesis on the "Red Blood Corpuscles" grew mainly out of study in Europe.

With his graduation in medicine his active public career may be said to have commenced. From the very start, his course as a teacher seems to have been predestined. The ink on his diploma was scarcely dry before we find him one of the members of a "quiz," fitting candidates for their final medical examinations. This never degenerated with him into a mere perfunctory performance, in return for fees already collected. He gave in addition to the ordinary "quiz" collateral lectures, in which the fluency and apt illustration, characteristic of the born teacher, were constantly recognized. It is but just to add that the interest and enthusiasm of the teacher reacted upon the class. Many a thirst for knowledge is blunted, depraved and at last quenched by some wretched substitute, simply because the teacher failed to reach a pure fountain head. In the long run, just how many wastes, dry and unproductive, our social life may reveal in consequence, it would be very hard to estimate. Randolph's zeal was an inspiration to his students. This, with his sound judgment, drew students to him and attached them to his own special line of work. This, though not itself genius, is so often associated with it that it is apt to pass for the greater quality. His popularity with his students was so great that an expressed wish from him was seldom, if ever, violated.

His earliest recognized instruction, under University control, was in the "Course Preparatory to Medicine," in the Scientific School of the University of Pennsylvania. His duty there was elementary instruction in physiology. Which he really preferred, physiology or hygiene, I never could decide. Either was more than broad enough, and with either he could have been content. It is certain that had his life been spared he would, sooner or later, have settled upon one or the other exclusively. It was necessary that he should have done so to produce his best results, and no one more quickly than he would have so discovered.

There was in his career no halting or hesitancy. He believed that only those who appreciate themselves and act for themselves can command the respect of others. Hence at no time, in any candidacy for professional or other honors, did he ever in the slightest degree apologize for his youth or depreciate his own right to freedom of judgment. After all, to such men official appointments are of very small importance. If no institution appreciates manly traits combined with great intellectual endow-

ments enough to secure them, then there is the open world where conscious integrity and fearless purpose will win their way to large success. Courage which stops short of aggressiveness by only a little, along with transparent honesty and a much greater than average mental activity, can always take the world, by storm if need be. These men require no favors.

During the last years in which Prof. Harrison Allen held the Chair of Physiology in the University of Pennsylvania, Dr. Randolph was made Assistant Demonstrator of Physiology. Dr. Allen writes of him: "I knew Randolph very well, and loved him dearly. He was faithful to trust, loyal in friendship, sagacious, affectionate and zealous. His career was one of preparation for the most part; but usefulness and honor were certainly to be his. His intellectual work showed great promise. His record as a teacher was already made at the time of his death. He was very popular with students and exerted a remarkable influence upon them. There is no doubt he would have attained a high rank as a platform lecturer."

After the resignation of Prof. Allen, Dr. Randolph abandoned his position as Demonstrator to the Chair of Physiology in the Medical Department of the University of Pennsylvania, and was made, in 1884, Instructor in Physiology in the Biological Department of the same University. July 18, he was elected to membership in the American Philosophical Society. He was also a member of the College of Physicians of Philadelphia.

His value was fast becoming recognized, and as he had filled his positions in the University to the entire satisfaction of the Trustees and the pupils, it is not strange that he was elected, in 1886, to fill the vacancy in the Chair of Hygiene, caused by the death of Dr. Joseph Richardson. In the very first meeting of the Faculty after he was elected to this position in the Auxiliary Faculty of Medicine, Dr. Randolph requested permission of his colleagues to show his respect to the memory of his predecessor by delivering that course of lectures in Dr. Richardson's name, and to turn the fees over to Mrs. Richardson. It was a graceful thing, *not a charity*, but simply one of those spontaneous acts which were so thoroughly characteristic of Randolph. It would never have been done, or even thought of, by any one less generous than he, and no one wondered at it—in him. Selfishness, or even the appearance of it, he abhorred.

The ease with which he wrote, the force, clearness and elegance of his style, combined to mark him as the man when, in December, 1885, an Assistant Editor was sought for the Philadelphia *Medical News*. He held the place until May, 1887, when he resigned it to take the Chief Editorship of the *Medical and Surgical Reporter*, published in the same city, and which, under the distinguished Dr. Daniel G. Brinton, had attained a very wide circulation.

Dr. Randolph's publications had not been very numerous. He had just entered upon the productive part of his life when he was taken hence.

He had, however, from time to time contributed brief papers to the scientific periodicals of the period. These are marked by clearness of statement, and the conclusions are so distinctly put that the busy worker could obtain the desired facts at a glance. For instance, he concludes his paper on the "Fæces of Starch-Fed Infants" thus: "First, that many infants of under three months can digest starchy foods. Second, that the individual variations in this regard are so numerous that no broad and general statement can be made as to the period at which infants begin to digest starches; and, Third, that the physician can be absolutely certain that a farinaceous ingredient in the diet of a young infant is beneficial, only by an examination of the dejecta under such diet. (See Transactions of College of Physicians of Philadelphia, 3d Series, Vol. vi, p. 443.)

In 1883, Dr. Randolph and Mr. A. E. Roussel contributed to the *Philadelphia Medical Times* a paper of great practical value, wherein it is proven that in about eighty per cent of the cases treated by inunction of cod-liver oil a notable increase of the fatty matter passed per anum was observed. This well-grounded observation is one to which the hard-pressed physician may frequently turn for support, in behalf of the conclusion that his oft-repeated inunctions have done good when the stomachs of his patients utterly refused to tolerate oleaginous substances, either as medicine or as food. It is the more important because of the scant use made of inunction by the medical practitioner.

In the Proceedings of the Philadelphia Academy of Natural Sciences, 1883, he published "A Study of the Distribution of Gluten within the Wheat Grains." This may be regarded as preliminary to the more extended paper, entitled "A Study of the Nutritive Value of Branny Foods." In the preparation of this, Mr. A. E. Roussel was associated with him. The conclusions reached are too long to be stated in full here. We may, however, as indicating the character of the paper, quote his fourth and fifth deductions: "That in an ordinary mixed diet the retention of bran in flour is a false economy, as its presence so quickens peristaltic action as to prevent the complete digestion and absorption not only of the proteids present in the branny food, but also of other food-stuffs ingested at the same time;" and, "That inasmuch as in the bran of wheat as ordinarily roughly removed there is adherent a noteworthy amount of the true gluten of the endosperm, any process which in the production of wheaten flour should remove simply the three cortical protective layers of the grain would yield a flour at once cheaper and more nutritious than that ordinarily used."

While it may be truly said that Dr. Randolph was by nature an investigator, yet his career as a popularizer of scientific knowledge gave almost equal promise. It is clear, however, that his choice of life work would have led him into the laboratory rather than into the field. The former gave time for thought and matured conclusions, whereas the latter often implied more hasty decision.

He was remarkable for his ingenuity in devising instrumental aids to his problems in science. In this it is not saying too much to assert that

few, if any, of his associates equaled him. His "Metastatic Heat Regulator" is an illustration. This simple contrivance was so arranged that a column of mercury regulated a gas jet so that, to use his own words, "temperature thus maintained is adjustable at will."

In January, 1887, he delivered, before the Franklin Institute of this city, a lecture on "Death." About the same time, there appeared in the (Philadelphia) *Medical Times* an article of his entitled "Is He Dead?" It was an admirable statement of the difficulties in defining just what is meant by the word Death. This may appear to be a mere play with words, but a perusal of the article will show, on the contrary, that it is a most important subject, and that there are serious problems and questions arising from the use of the word. The article in question makes clear to even the most unlearned, that at any point prior to that at which muscular putrefaction occurs there still linger about the body some of the attributes of life.

Besides the papers quoted above there are :

"On Certain Untoward Effects of the Administration of Turpeth Mineral," Randolph and Roussel, Philadelphia *Medical News*, 1884.

"A Preliminary Note on a Reaction Common to Peptone and Bile-Salts," in Proc. Phila. Academy of Natural Sciences, 1884.

"A Note on the Behavior of Hydrobromic Acid and of Potassium Iodide in the Digestive Tract," Phila. Neurological Society, April 28, 1884

"On the Digestion of Raw and Boiled Milk," Randolph and Roussel, in Proc. Phila. Acad. Nat. Sciences, 1884.

"On the Behavior of Petrolatum in the Digestive Tract," Proc. Phila. Acad. Nat. Sciences, 1884.

"Cutaneous Absorption of Nicotine," Randolph and Dixon, Proc. Phila. Acad. Natural Sciences, 1884.

"On the Dietetic Factor in the Treatment of Angina Pectoris." Read before the Phila. Neurological Society, 1884.

"On the Cutaneous Absorption of Salicylic Acid," Randolph and Dixon, Phila. *Medical News*, 1885.

"A Note on the Irradiation of Motor Impulses," Transactions of the College of Physicians of Philadelphia, March 2, 1887.

The above are his most important contributions. There are others, briefer and more hastily written often, which every one in the position of an editor must from time to time prepare, but which it would be unfair to allude to save as evincing the ease and grace of his style of composition.

On Friday, August 19, 1887, Dr. Randolph left his work and went to Longport, on the New Jersey coast, for a little needed rest. His family was already there. The change of scene and freedom from work appeared to give him new life. It was, however, evident enough that he was suffering from overwork. And though he very seldom alluded to his physical condition, it was quite clear that he realized he was overtaxed in mind and in body. Editorial duties and the business cares associated

with them were producing that state of mental worry which is the usual precursor of waning vigor. But besides these he still kept up his other appointments, save that of Physiology, in the Biological Department of the University of Pennsylvania. This he relinquished to Dr. Hobart Hare.

The surf bath which ordinarily infused fresh life into him failed to do so on Saturday morning. On Sunday, as the bathing hour approached, accompanied by his wife and little daughter, he went down to the beach. The party lingered there until all the bathers had retired, and then he and his wife went in for a "final dip." After a few minutes his wife noticed a change in his countenance. Probably they had ventured further than was safe, but, as they had often done so before, nothing was thought of it. After a few minutes struggling, in which he became separated from Mrs. Randolph, he fell forward, and—was dead.

From the account given by his wife, it is certain that there was a sudden heart failure, to which, and not to drowning, in the ordinary sense of the term, his death was due.

Though relief came as promptly as could be expected, all hope was gone. For two hours friends labored to restore him, feeling, however, that it was in vain. His devoted companion, taken from the water insensible, was saved almost by a miracle.

Thus, in his twenty-ninth year, was taken from us one who had already left his impress on the scientific character of the city in which he lived. His friend and associate, Prof. Harrison Allen, touchingly writes: "Randolph's name is to be added to the long list of young men we have lost in Philadelphia, in our own time—to Hare, George Pepper, Parry, Jenks, Rhoads and Hunter—a loss that is simply irreparable to us. His death came as a shock to the community in which he had, but a few days earlier, moved so full of activity and of promise. The leading daily papers spontaneously echoed the sentiments of those who knew him best, when they deplored his death as a public calamity."

It may not be improper to allude to the one indulgence of his life, that of cigarette smoking, and to ask whether it may not have been partly responsible for his death? This, probably, never can be answered, though we do know that he had long had a tendency to cardiac trouble; that his use of cigarettes was far from moderate, and that under such circumstances the physiological effects (or pathological effects) of tobacco upon the heart might almost be expected.

We are accustomed to regard this as an exceptional age, but, save when the world slumbered from wickedness and weakness just before the sixteenth century, there never has been a time when men did not think much the same of the period in which they lived. But may we not at least say that this has in some sense been an age of transition. It seems to be so notably in the relation of the woman to the world. We no longer ask, by how narrow limits can her life be circumscribed, but how wide a range can we open to her, or help her to open for herself? Dr. Randolph was "advanced" in his views on this question.

His broad humanitarian ideas revolted at the thought of being a laggard in the cause, and, from the first to the last, his voice was always in favor of opening every avenue to her aspirations, and thus allowing her to stand or fall by what she could do in the great moral and industrial struggles of our daily life. No popular prejudices, no sordid motives ever blinded him to the fact that she had a divine right to become a physician, a philanthropist, a reformer, and that it was not only in vain to oppose her, but that it was cowardly to do so.

It is remarkable to what an extent he had impressed his individuality upon others, without in the least trying to do so. Among his acquaintances, his advice was often asked and was honestly given; even when, from a selfish standpoint, it might have been prudently withheld. He was generous, perhaps, to a fault. When appealed to for aid, he seemed to think there was nothing to do but to give. The idea of refusing was so foreign to his nature that if it ever came at all, it was only as an after-thought.

Looking back upon his life in connection with our great University, one is surprised to find how many worthy young men he discovered, and how many of them he inspired with a zeal for work; and also how many of them he was the means of making life much easier to. I now remember but a single instance in which his protégés proved disappointing.

Dr. Randolph married Anna Louisa, daughter of Dr. William Charles and Elizabeth Lean Head. Three children survive him. His domestic life was one of rare happiness. Nothing diverted his affections or interest from his home and his work. His memory is precious for the illustration it furnishes of how much good may be done by one in early life.